

# Travis A. Berger

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## EDUCATION

**University of Hawai‘i at Mānoa**, Honolulu, Hawaii

Aug 2015 – Aug 2021

- Ph.D. in Astronomy (2021)
- M.S. in Astronomy (2017), GPA: 3.97 / 4.00

**University of North Carolina at Chapel Hill**

Aug 2011 – May 2015

- B.S. in Physics with Astrophysics Option, GPA: 3.84 / 4.00
- Graduated with Highest Honors and Highest Distinction
- Honors Thesis: *The Skynet Algorithm for Single-Dish Radio Mapping*, Prof. Daniel Reichart

## RESEARCH EXPERIENCE

**NASA Goddard Space Flight Center**

Sep 2021 – present

- NASA Postdoctoral Program (NPP) Fellow
  - *Precise Demographics of NASA Kepler, K2, and TESS Exoplanets*, Dr. Joshua Schlieder

**Institute for Astronomy, University of Hawai‘i at Mānoa**

Aug 2015 – Aug 2021

- NASA FINESST Future Investigator
  - *Precise Radius, Metallicity, and Age Demographics of Kepler Exoplanets in the Gaia Era*, Dissertation, Prof. Daniel Huber, Prof. Jennifer van Saders, and Prof. Eric Gaidos
- Graduate Research Assistant
  - *Identifying Young Kepler Planet Host Stars from Keck-HIRES Spectra of Lithium*, Prof. Andrew Howard and Prof. Ann Boesgaard
  - *Quantitative Spectroscopy of Blue Supergiants in Dwarf Galaxy IC 1613*, Prof. Rolf-Peter Kudritzki
  - *Observing Eclipsing Binaries in the Andromeda Galaxy*, Prof. Eugene Magnier

## PUBLICATIONS

**Summary: 20 total, 5 first author; 790+ citations; h-index: 11**

## FIRST AUTHOR PUBLICATIONS

- [1] T. Berger, D. Huber, E. Gaidos, and J. van Saders “Revised Radii of *Kepler* Stars and Planets Using *Gaia* Data Release 2,” *ApJ*, vol. 866, no. 2 pp. 99, Oct 2018. Citations: 174
- [2] T. Berger, D. Huber, J. van Saders, E. Gaidos, J. Tayar, and A. Kraus “The Gaia-Kepler Stellar Properties Catalog. I. Homogeneous Fundamental Properties for 186,301 Kepler Stars,” *AJ*, vol. 159, no. 6 pp. 280, Jun 2020. Citations: 68
- [3] T. Berger, D. Huber, E. Gaidos, J. van Saders, and L. Weiss “The Gaia-Kepler Stellar Properties Catalog. II. Planet Radius Demographics as a Function of Stellar Mass and Age,” *AJ*, vol. 160, no. 3 pp. 108, Sep 2020. Citations: 51
- [4] T. Berger, A. Howard, and A. Boesgaard, “Identifying Young Kepler Planet Host Stars from Keck-HIRES Spectra of Lithium,” *ApJ*, vol. 855, no. 2, pp. 115, Mar 2018. Citations: 12
- [5] T. Berger, R. Kudritzki et al., “Quantitative Spectroscopy of Supergiants in the Local Group Dwarf Galaxy IC 1613: Metallicity and Distance,” *ApJ*, vol. 860, no. 2, pp. 130, Jun 2018. Citations: 8

## STUDENT PUBLICATIONS

- [6] L. Wolniewicz, T. Berger, and D. Huber, “The Stars Kepler Missed: Investigating the Kepler Target Selection Function Using Gaia DR2,” *AJ*, vol. 161 no. 5 pp. 231 May 2021. Citations: 4

## CONTRIBUTING AUTHOR PUBLICATIONS

- [7] K. Meech, R. Weryk, et al., including T. Berger, “A brief visit from a red and extremely elongated interstellar asteroid,” *Nature*, vol. 552, no. 7685, pp. 378–381, Dec 2017. Citations: 206
- [8] L. Zeng, S. Jacobsen, et al., including T. Berger, “Growth model interpretation of planet size distribution,” *PNAS*, vol. 116, no. 20, pp. 9723–9728, May 2019. Citations: 129
- [9] S. Bryson, J. Coughlin, N. Batalha, T. Berger, et al., “A Probabilistic Approach to Kepler Completeness and Reliability for Exoplanet Occurrence Rates,” *AJ*, vol. 159, no. 6, pp. 279, Jun 2020. Citations: 30

- [10] S. Bryson, M. Kunimoto, et al., including T. Berger, “*The Occurrence of Rocky Habitable Zone Planets Around Solar-Like Stars from Kepler Data*,” *AJ*, vol. 161, no. 1, pp. 36, Jan 2021. Citations: 24
- [11] E. Gaidos, T. Hirano, et al., including T. Berger, “Zodiacal exoplanets in time - X. The orbit and atmosphere of the young ‘neptune desert’-dwelling planet K2-100b,” *MNRAS*, vol. 495, no. 1, pp. 650-662, Apr 2020. Citations: 17
- [12] R. Angus, B. Angus, et al., including T. Berger, “Exploring the Evolution of Stellar Rotation Using Galactic Kinematics,” *AJ*, vol. 160, no. 21, pp. 90, Aug 2020. Citations: 17
- [13] A. Chontos, D. Huber, et al., including T. Berger, “The Curious Case of KOI 4: Confirming Kepler’s First Exoplanet Detection,” *AJ*, vol. 157, no. 5, pp. 192, May 2019. Citations: 13
- [14] A. Trotter, D. Reichart, et al., including T. Berger, “The fading of Cassiopeia A, and improved models for the absolute spectrum of primary radio calibration sources,” *MNRAS*, vol. 469, no. 2, pp. 1299-1313, Aug 2017. Citations: 9
- [15] E. Gaidos, T. Jacobs, et al., including T. Berger, “Planetesimals around stars with TESS (PAST) - I. Transient dimming of a binary solar analogue at the end of the planet accretion era,” *MNRAS*, vol. 488, no. 4, pp. 4465-4476, Oct 2019. Citations: 8
- [16] M. Shabram, N. Batalha, et al., including T. Berger, “Sensitivity Analyses of Exoplanet Occurrence Rates from Kepler and Gaia,” *AJ*, vol. 160, no. 1, pp. 16, Jul 2020. Citations: 6
- [17] D. Thorngren, J. Fortney, et al., including T. Berger, “Slow Cooling and Fast Reinflation for Hot Jupiters,” *ApJL*, vol. 909, no. 1, pp. L16, Mar 2021. Citations: 5
- [18] I. Wong, A. Shporer, et al., including T. Berger, “The Full Kepler Phase Curve of the Eclipsing Hot White Dwarf Binary System KOI-964,” *AJ*, vol. 159, no. 1, pp. 29, Jan 2020. Citations: 5
- [19] M. Maples, D. Reichart, et al., including T. Berger, “Robust Chauvenet Outlier Rejection,” *ApJS*, vol. 238, no. 1, pp. 2, Sep 2018. Citations: 3
- [20] J. Martin, D. Reichart, et al., including T. Berger, “Skynet Algorithm for Single-dish Radio Mapping. I. Contaminant-cleaning, Mapping, and Photometering Small-scale Structures,” *ApJS*, vol. 240, no. 1, pp. 12, Jan 2019. Citations: 3

#### CONFERENCE PRESENTATIONS AND SEMINARS

- *Invited Talk*, NASA Goddard Extrasolar Planet Seminar Mar 2021
- *Invited Talk*, Center for Computational Astrophysics Stars and Planets Meeting Dec 2020
- *Invited Talk*, American Museum of Natural History Seminar Nov 2020
- *Talk*, Exoplanet Demographics Conference Nov 2020
- *Invited Talk*, Penn State/CEHW Seminar Aug 2020
- *Invited Talk*, Exostar Redux Aug 2020
- *Talk*, Exoplanets III Jul 2020
- *Invited Talk*, Princeton Exoplanet Group Seminar Jul 2020
- *Invited Talk*, ExoPAG Science Interest Group #2 Seminar Jul 2020
- *Talk*, Planet-Star Connections in the Era of TESS and Gaia, Santa Barbara, CA May 2019
- *Talk*, Kepler/K2 Science Conference V, Glendale, CA Mar 2019

#### AWARDS & LEADERSHIP

- Executive Secretary, NASA XRP Program
- OVCR Doctoral Research Award, UH Mānoa Apr 2021
- NASA FINESST Future Investigator, UH Mānoa Aug 2019 – Aug 2021
- ARCS Scholar Award, UH Mānoa, ARCS Foundation Mar 2020
- Undergraduate research award, UNC Department of Physics & Astronomy May 2015
- Dean’s List, Fall 2011 through Spring 2015, UNC Chapel Hill 2011 – 2015
- Director’s Award, UH Institute for Astronomy Jan 2015
- Inducted into the Phi Beta Kappa Honor Society, UNC Chapel Hill Nov 2014
- North Carolina Space Grant, UNC Chapel Hill Summer 2013, 2014

#### TEACHING & OUTREACH EXPERIENCE

- REU Mentor for Linnea Wolniewicz, Institute for Astronomy May 2020 – January 2021

- Advised and assisted on project evaluating the Kepler target selection function, paper submitted.

**Maunakea Scholars Mentor**, Institute for Astronomy Fall 2017 – Spring 2021

- Mentored high school students proposing for observing time on Maunakea telescopes
- Reviewed/edited student observing proposals

**Outreach Volunteer**, Institute for Astronomy Aug 2015 – Aug 2021

- Set up telescopes and explained simple physical information about stars, nebulae, and galaxies
- Participated in the Institute for Astronomy's annual Open House where I taught hundreds of children about the composition of comets and the uses of spectroscopy

**Professional Development Program** Mar 2016 – Nov 2016

- Designed an inquiry-based teaching activity on Fourier Analysis
- Taught a UH undergraduate lab about Fourier Analysis through designed activity
- Learned about and implemented equitable and inclusive teaching methods into activity